Savannah River Remediation

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Cost Savings Initiatives (CSI) Process

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Savannah River Remediation

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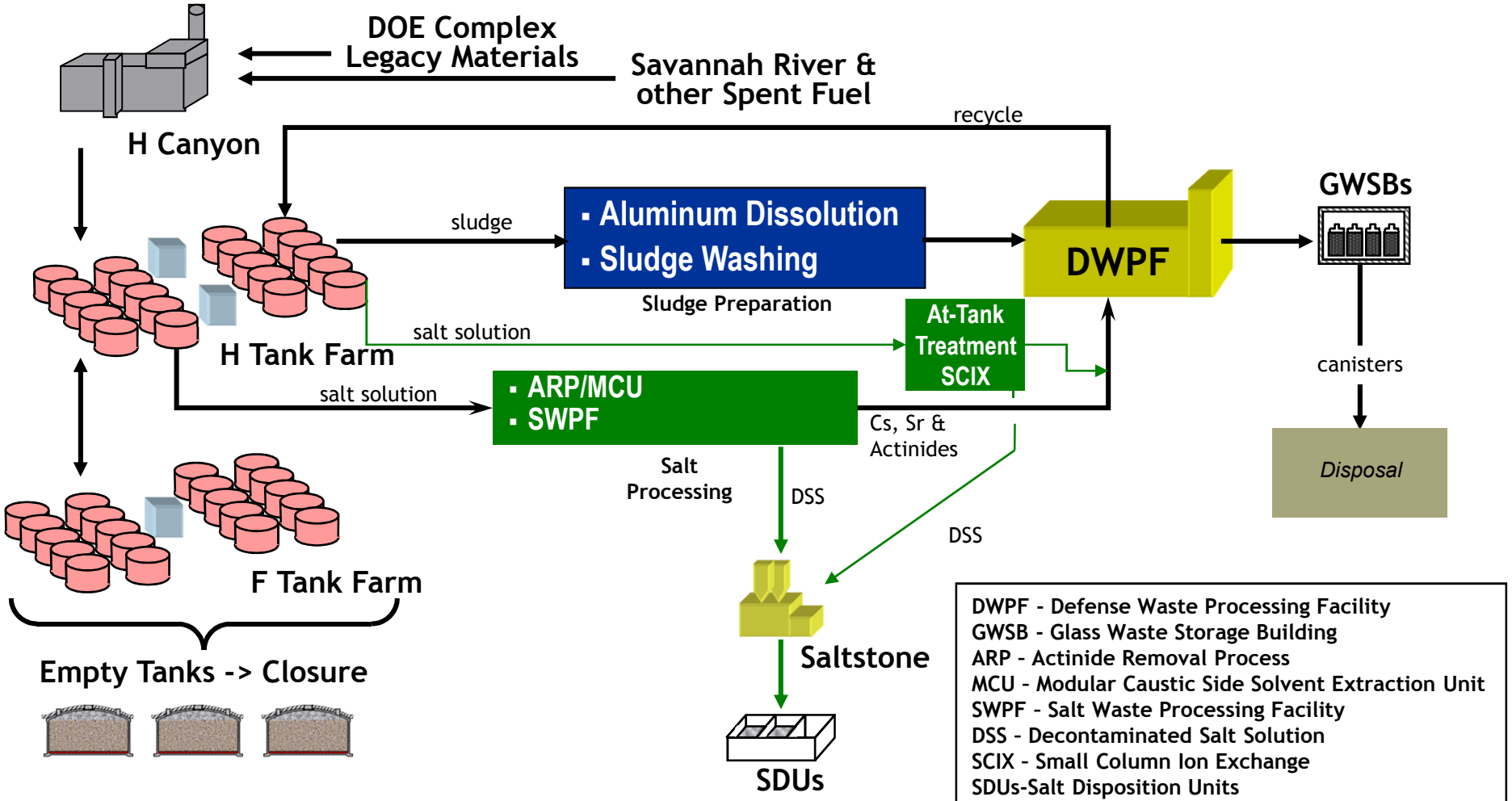
Purpose

- To fulfill Savannah River Site Citizens Advisory Board 2012 Waste Management Committee Work Plan topic

Liquid Waste System



DWPF - Defense Waste Processing Facility
GWSB - Glass Waste Storage Building
ARP - Actinide Removal Process
MCU - Modular Caustic Side Solvent Extraction Unit
SWPF - Salt Waste Processing Facility
DSS - Decontaminated Salt Solution
SCIX - Small Column Ion Exchange
SDUs-Salt Disposition Units
NGS - Next-generation Solvent

Overview

Regulatory Drivers

- Federal Facilities Agreement (FFA)
  - Requires the 22 remaining old-style tanks to be operationally closed by the end of FY2022
- Site Treatment Plan (STP)
  - Requires *"removal of the backlogged and currently generated waste inventory by 2028"*

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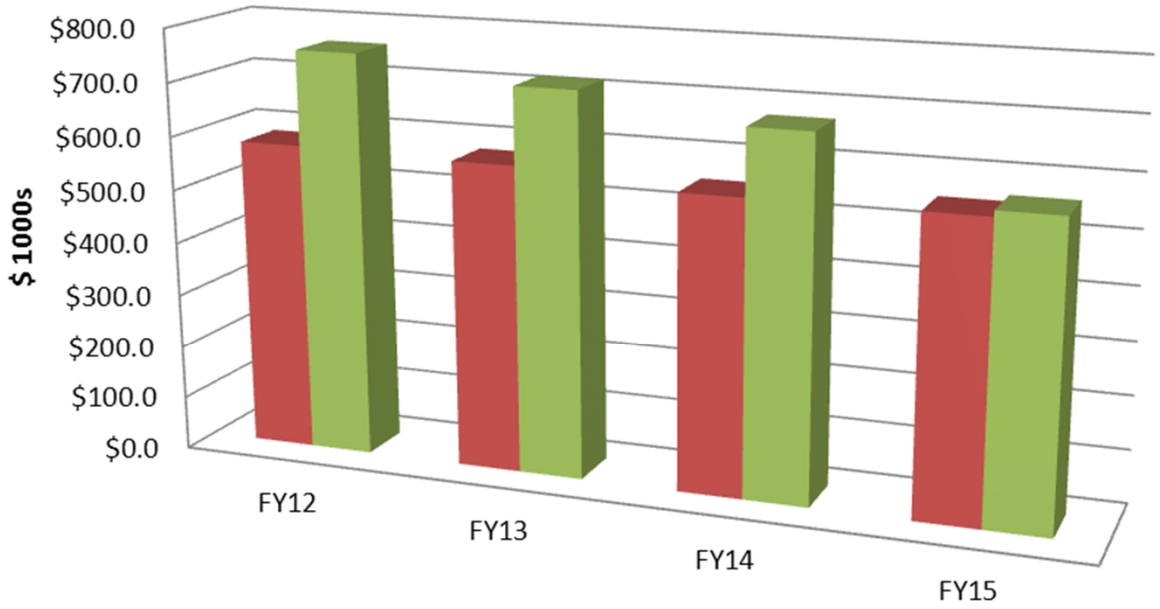
SRR Funding Profile



	FY12	FY13	FY14	FY15
Funding/Planning Case	$581.3	$575.1	$550.4	$551.3
System Plan Revision 16	$759	$718	$674	$563

Note that GWSB# 3 not included in the funding profile

Overview

- All Liquid Waste activities are placed on an Integrated Priority List
- In the past, the funding line would be moved up or down the list to match the funding allocation
  - everything below the line was cut
- This would have eliminated all project work
  - waste removal to provide feed to Defense Waste Processing Facility
  - tank closures
  - preparations for Salt Waste Processing Facility (SWPF) startup
- A new approach was needed
  - that can be executed with high confidence
  - without reliance on new technologies or regulatory relief

Reinvention Process

4 Step Plan

1. Scope and Price the Just in Time (JIT) Compliant Case
   - eliminate everything that is not needed to support regulatory commitments, employee development and safety
   - schedule what remains on a Just in Time basis
2. Add new scope and pricing not in the current contract
3. Compare JIT Compliant Case cost to expected funding
4. Priority Add Backs (PABs)
   - Use unallocated funding to “buy back” program acceleration or to reduce programmatic risk

JIT Compliant Case + PABs = Recommended Case

- New technologies will be pursued, but treated as opportunities

Just In Time Compliance

Scope to meet regulatory requirements JIT

1. Surveillance and Maintenance
2. Immobilize sludge to meet the STP & FFA JIT
   - adjust canister production to finish Sep 2028 which is an average of 275 cans/year with melter outages
   - adjust Glass Waste Storage Building (GWSB) #3 schedule to match canister production
3. Immobilize salt to meet the STP & FFA JIT
   - Rely on SWPF (Small Column Ion Exchange not needed for JIT)
4. Close tanks to meet the FFA JIT
   - defer tank closures so that the FFA is met JIT in FY2022
5. Receive waste from other site missions

Priority Add Back

Priority Add Back Guide

- Mega SDUs and Control Room Consolidation
  (Return On Investment < 3-4 years)
- Mature Tank 48 alternative treatment technology
- Accelerate closure of old-style sludge tanks (unrestrained by SWPF)
- Deploy Small Column Ion Exchange to reduce SWPF risk (late start, low throughput)
- Accelerate DWPF to finish Dec 2026 (275 > 320 cans/yr)
- Additional acceleration of tank closures as increased salt processing allows
- Start Tank 48 chemical destruction field modifications
- Life Cycle acceleration per LWSP rev. 16

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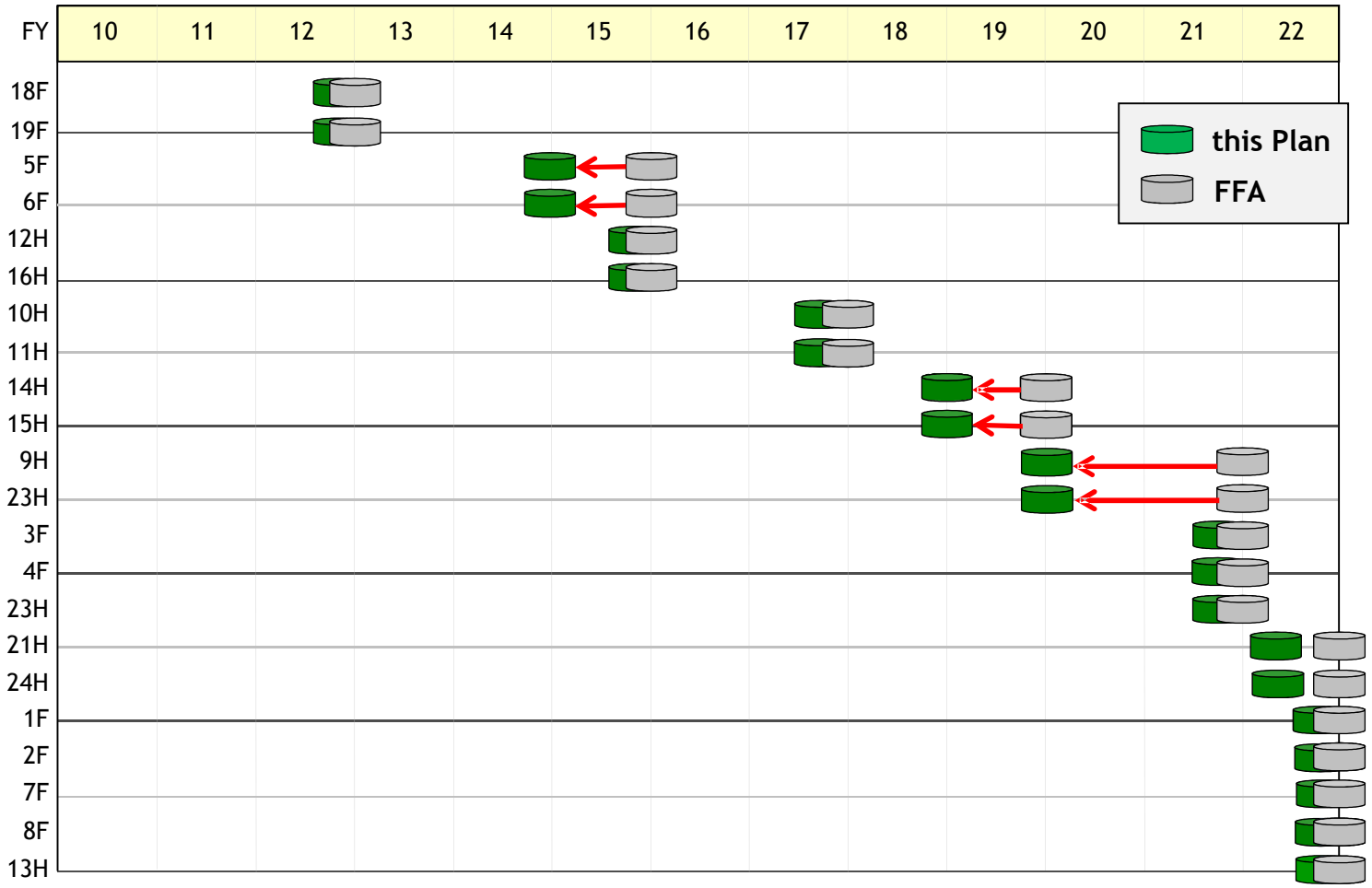
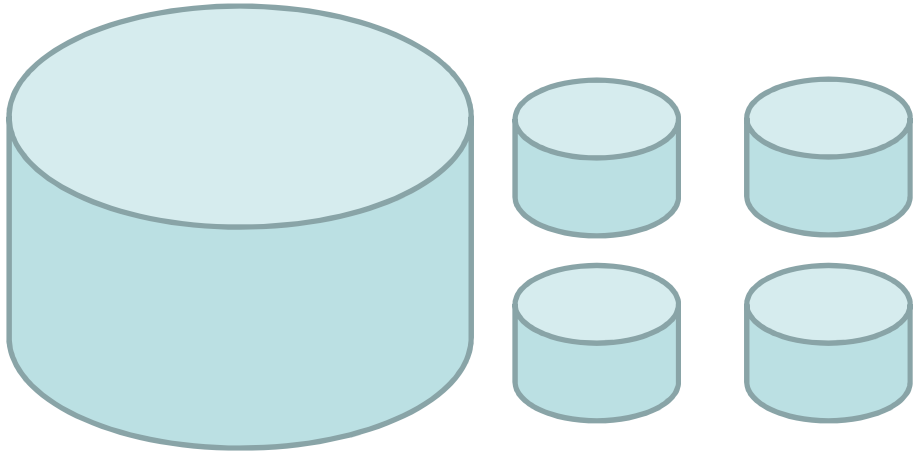
Tank Closure Summary



Mega SDUs

- **Replace current Salt Disposal Units (SDUs) design with a Mega-SDU design**
- **Each Mega-SDU will provide disposal capacity equivalent to approximately 10 previously planned SDU cells.**
- **Benefit**
  - Reduces project costs associated with construction installation materials and schedules
- **Cost savings**
  - ~$97M from FY12-FY17
  - ~$487M lifecycle



Control Room Consolidation

- **Combines 4 separate control rooms into one Consolidated Control Room**
- **Benefits**
  - Improved safety environment
  - Enhanced conduct of operations and command/control
  - Simplified communications
  - Consolidate and standardize operator interface
  - Integrated computer system
- **Cost savings**
  - ~$21M for FY12-FY17
  - ~$54M lifecycle

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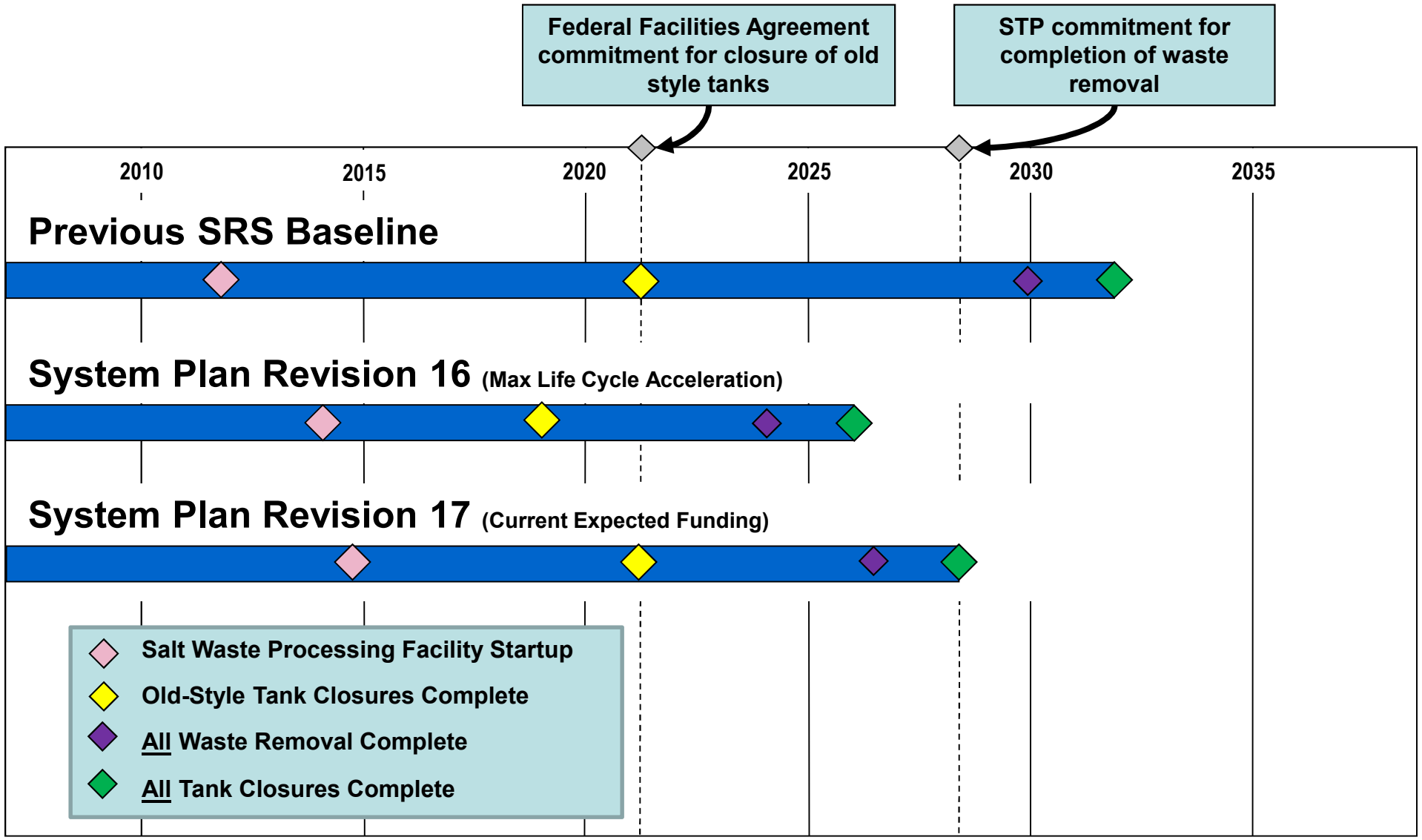
Projected Life Cycle Savings at Expected Funding



Summary

The Recommended Strategy supports:

- FFA compliance
- STP compliance
  - All salt and sludge processed by 2026
- Major portion of Life Cycle Cost savings preserved
  - 4 years at $2B
- Maintains the option for further Life Cycle acceleration with additional investment